Serial No.: 10/646,183
Amdt. dated May 12, 2008
Reply to Advisory Action of April 10, 2008

PATENT
PD020083
Customer No. 24498

Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Cancel Claims 1-12

13. (New) Method for processing video picture data for display on a display device having a plurality of luminous elements corresponding to pixels of a video picture, wherein the brightness of each pixel is controlled by at least one sub-field code word with which the luminous element/s are activated or inactivated for light output in small pulses corresponding to sub-fields in a video frame, each sub-field having assigned a sub-field weight, the sub-field determining the length in time a pixel is activated during this sub-field, the method comprising the steps of:
　　dithering said video picture data and sub-field coding said dithered video picture data for brightness control,
　　transforming said video picture data according to a non-linear function representing the Weber-Fechner-law before said dithering step and sub-field coding said dithered video picture data for brightness control,
　　wherein in the step of sub-field coding a specific code is used in which by corresponding bit entries it is avoided that in a frame period a sub-field is inactivated between two activated sub-fields and wherein the sub-field weights are adapted to grow according to the inverse of the non-linear function representing the Weber Fechner-law, thereby integrating the inverse transformation of the dithered video picture data in the step of sub-field coding.

14. (New) Method according to claim 13, wherein said transforming step includes expanding low video levels of brightness and compressing high video levels of brightness.

15. (New) Method according to claim 13, wherein said non-linear function is $y = a \cdot \log_{10}(b + c \cdot x)$ where a, b, and c are real numbers.

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16. (New) Method according to claim 13 wherein said non-linear function is applied via a look-up table.

17. (New) Method according to claim 13 wherein the dithering step has a characteristic that by using one sub-field, more video levels are rendered in the high video level range than in the low video level range.

18 . (New) Device for processing video picture data for display on a display device having a plurality of luminous elements corresponding to pixels of a video picture, comprising

brightness controlling means with which the brightness of each pixel is controlled by at least one sub-field code word with which the luminous element/s are activated or inactivated for light output in small pulses corresponding sub-fields in a video frame, each sub-field having assigned a sub-field weight, the sub-field weight determining the length in time a pixel is activated during this sub-field,

dithering means for dithering said video picture data, the dithering means including transforming means for transforming said video picture data according to a non-linear function representing the Weber- Fechner-law before dithering and sub-field coding means for sub-field coding said dithered video picture data for displaying specific code in which by corresponding bit entries it is avoided that in a frame period a sub-field is inactivated between two activated sub-fields, and wherein sub-field weights are adapted to grow according to the inverse of the non-linear function representing the Weber -Fechner-law, thereby integrating the inverse transformation of the dithered video picture data in the step of sub-field coding.

19. (New) Apparatus according to claim 18 wherein said transforming means causes expansion of low video levels of brightness and compression of high video levels of brightness.

20. (New) Apparatus according to claim 18, wherein said non-linear function for transforming input values to output values is $y = a \cdot \log_{10}(b + c \cdot x)$ where a, b, and c are real numbers.

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21. (New) Apparatus according to claim 18 wherein said non-linear function is applied via a look-up table.

22. (New) Apparatus according to claim 18 wherein the transforming means causes the dithering means step to render more video levels using one sub-field in the high video level range than in the low video level range.

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